

IN THE CLAIMS

Please amend the claims as follows:

Claims 1-9 (Canceled).

Claim 10 (currently amended): A method for producing the catalyst as described in claim 2, comprising contacting a solution comprising ruthenium, a solution comprising ruthenium and cobalt, or a solution comprising ruthenium, cobalt and magnesium with a zirconia carrier; drying the carrier; and calcining the carrier A method for autothermal reforming to produce hydrogen or a synthesis gas, comprising contacting a feedstock as a starting material and a reforming gas comprising oxygen and steam with a catalyst, wherein

the catalyst comprises ruthenium supported on a zirconia carrier and an amount of ruthenium supported on the carrier is from 0.05 to 20 wt.% based on the entirety of the catalyst;

or p.27 l. 11
a ratio of steam to the feedstock fed to the reaction system is from 0.1 to 10 in terms of the number of water molecules/the number of carbon atoms in the feedstock; and
a ratio of oxygen to the feedstock fed to the reaction system is from 0.1 to 1 in terms of the number of oxygen molecules/the number of carbon atoms in the feedstock.

Claim 11: (Canceled).

Claim 12 (currently amended): A method for producing hydrogen or a synthesis gas, comprising contacting an organic compound and a reforming gas with a catalyst wherein the catalyst comprises an inorganic oxide carrier wherein the inorganic oxide carrier comprises from 0.05 to 20 wt.% zirconium as reduced to ZrO₂ and ruthenium A method for autothermal

reforming to produce hydrogen or a synthesis gas, comprising contacting a feedstock as a

starting material and a reforming gas comprising oxygen and steam with a catalyst,

wherein

the catalyst comprises zirconium and ruthenium supported on an inorganic oxide
carrier and an amount of zirconium on the carrier is from 0.05 to 20 wt.% as reduced to ZrO₂
based on the entirety of the catalyst:

a ratio of steam to the feedstock fed to the reaction system is from 0.1 to 10 in terms
of the number of water molecules/the number of carbon atoms in the feedstock;

and a ratio of oxygen to the feedstock fed to the reaction system is from 0.1 to 1 in
terms of the number of oxygen molecules/the number of carbon atoms in the feedstock.

Claim 13 (currently amended): The method according to claim 12, further comprising
contacting the catalyst with a starting material for producing hydrogen or a synthesis gas
wherein the starting material is a hydrocarbon The method according to claim 12, wherein the
starting material is a hydrocarbon.

Claim 14 (currently amended): The method according to claim 13, wherein the
hydrocarbon is at least one member selected from the group consisting of methane, liquefied
petroleum gas, naphtha, kerosene, and gas oil The method according to claim 13, wherein
the hydrocarbon is at least one member selected from the group consisting of methane,
liquefied petroleum gas, naphtha, kerosene, and gas oil.

Claim 15 (currently amended): The method according to claim 12, wherein the
hydrocarbon is at least one member selected from the group consisting of methanol, ethanol,
and dimethyl ether.

Claim 16 (previously presented): The method according to claim 12, wherein the reforming gas comprises a mixture of oxygen, steam and carbon dioxide. *etc*

¶ Claim 17 (currently amended): A method for reforming hydrocarbon, comprising contacting carbon dioxide gas with a catalyst comprising a zirconia carrier and ruthenium to produce a resultant mixture; and reforming hydrocarbon with the resultant mixture. A method for reforming hydrocarbon, comprising contacting the hydrocarbon and carbon dioxide gas with a catalyst,

wherein

¶ the catalyst comprises ruthenium supported on a zirconia carrier and an amount of ruthenium supported on the carrier is from 0.05 to 20 wt.% based on the entirety of the catalyst; and

¶ a ratio of feedstock hydrocarbons to carbon dioxide is from 1 to 20 in terms of the number of carbon dioxide molecules/the number of carbon atoms in the hydrocarbons.

¶ Claim 18 (currently amended): A method for reforming hydrocarbon, comprising contacting carbon dioxide gas with a catalyst comprising an inorganic oxide carrier, from 0.05 to 20 wt.% zirconium as reduced to ZrO₂, and ruthenium to produce a resultant mixture; and reforming hydrocarbon with the resultant mixture. A method for reforming hydrocarbon, comprising contacting the hydrocarbon and carbon dioxide gas with a catalyst comprising zirconium and ruthenium supported on an inorganic oxide carrier,

wherein

the catalyst comprises an amount of zirconium supported on the carrier of from 0.05 to 20 wt.% zirconium as reduced to ZrO₂ based on the entirety of the catalyst; and

or a ratio of feedstock hydrocarbons to carbon dioxide is from 1 to 20 in terms of the number of carbon dioxide molecules/the number of carbon atoms in the hydrocarbons.

3 *or* Claim 19 (currently amended): The method according to claim 17, wherein the ruthenium is present in an amount of from 0.05 to 20 wt.% The method according to claim 17 or 18, wherein the ruthenium is present in an amount of from 0.05 to 20 wt.%.

or Claim 20 (currently amended): The method according to claim 17, wherein the catalyst further comprises at least one member selected from the group consisting of cobalt and magnesium The method according to claim 17, wherein the catalyst supported on the zirconia carrier further contains at least one member selected from the group consisting of cobalt and magnesium.

Claim 21 (previously presented): The method according to claim 20, wherein the cobalt content is from 0.01 to 30 based on the atomic ratio of cobalt to ruthenium.

4 *or* Claim 22 (currently amended): The method according to claim 20, wherein the magnesium content is from 0.5 to 20 wt.% as reduced to MgO based on the entirety of the catalyst.

or Claim 23 (previously presented): The method according to claim 18, wherein the inorganic oxide carrier comprises alumina.

5 Claim 24 (currently amended): The method according to claim 23, wherein the alumina is at least one member selected from the group consisting of α -alumina and γ -

~~alumina~~ The method according to claim 23, wherein the alumina is at least one member selected from the group consisting of α -alumina and γ -alumina.

Claims 25: (Canceled).

~~6~~ Claim 26 (currently amended): The method described in claim 17, further comprising contacting a solution comprising ruthenium, a solution comprising ruthenium and cobalt, or a solution comprising ruthenium, cobalt and magnesium with a zirconia carrier; drying the carrier; and calcining the carrier The method according to claim 18, the catalyst supported on the inorganic oxide carrier further contains at least one member selected from the group consisting of cobalt and magnesium.

Claim 27 (currently amended): The method as described in claim 18, further comprising contacting a solution comprising zirconium, a solution comprising zirconium and ruthenium, a solution comprising zirconium, ruthenium, and cobalt, or a solution comprising zirconium, ruthenium, cobalt, and magnesium with an inorganic oxide carrier; drying the carrier; and calcining the carrier The method according to claim 26, wherein the cobalt content is from 0.01 to 30 based on the atomic ratio of cobalt to ruthenium.

Claim 28 (canceled)

~~6~~ Claim 29 (previously presented): The method according to claim 17, wherein the hydrocarbon is methane.

Claim 30 (currently amended): ~~A method for reforming natural gas, comprising contacting natural gas with the catalyst according to Claim 2 A method for reforming hydrocarbon according to any one of claims 17, wherein the hydrocarbon is a natural gas.~~

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Claim 31 (currently amended): ~~A method, comprising reforming at least one member selected from the group consisting of hydrocarbon and natural gas in the presence of the catalyst according to Claim 2 and a mixture comprising carbon dioxide and steam. The method for reforming hydrocarbon according to Claim 17, wherein carbon dioxide gas and steam contact the catalyst, a ratio of steam to carbon contained in the hydrocarbon is less than 10, and a ratio of carbon dioxide to carbon contained hydrocarbon is from 20/80 to 70/30.~~

or Claim 32 (new): The method according to claim 18, wherein ruthenium is present in an amount of from 0.05 to 20 wt.% based on the entirety of the catalyst.

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or Claim 33 (new) The method according to claim 26, wherein the magnesium content is from 0.5 to 20 wt.% as reduced to MgO based on the entirety of the catalyst.